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APPLICATION NO.	FILING DATE	FIRSTALL		<u> </u>
10/041 057		FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,957	01/07/2002	Steven Teig	SPLX.P0044	5414
	90 05/19/2004 OLLANGEN G A DELL		EXAMI	NER
STATTLER JOHANSEN & ADELI P O BOX 51860			TAT, BINH C	
PALO ALTO, (CA 94303		ART UNIT	PAPER NUMBER
			2825	
			DATE MAILED: 05/19/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

## Disposition of Claims 10041,957 TEIGETAL Examiner Art Unit Examiner			Applicati n N .	Applicant(s)
Binh C. Tat Art Unit Binh C. Tat 2825		Office Action Summany	10/041,957	
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Art Unit: 2825

DETAILED ACTION

This office action is in response to application 10/041957 filed on 02/07/02.
 Claims 27-47 remain pending in the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the ad to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 27-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scepanovic (US Patent 5,578,840) in view of Raspopovic (US6230306).
- 3. As to claims 27, Sarrafzadeh et al. a method of pre-computing routes for nets in a region of an integrated circuit ("IC") layout, the method comprising: a) defining a set of partitioning lines for partitioning the region into a plurality of sub-regions during a. routing operation (see fig 5-9; col 1 lines 15-23 and abstract); b) for a set of potential sub-regions, identifying a set of routes that traverse the potential set of sub-regions, wherein at least one of the routes has at least one diagonal edge (figs 5-9 col. 1 lines 15-23, and fig 15 col. 10 lines 5-10); Scepanovic did not teach storing the identified routes

Raspanovic did teach storing the identified routes (col. 17, table 11).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the identified routes because store the identified routes could be utilized in the future for design if needed, which would improve design time.

- 4. As to claim 28 Sarrafzadeh et al. teach wherein a plurality of paths exist between the sub-regions defined by the set of partitioning lines, wherein a plurality of the paths are diagonal paths, wherein at least one of the routes traverses some of the diagonal paths (see fig 13, 14, 16 col.2; col. 10).
- 5. As to claims 29 Sarrafzadeh et al. teach wherein identifying the routes comprises identifying the paths between the sub-regions used by each route (see fig 13, 14, 16 col.2; col. 10).
- 6. As to claim 30, Sarrafzadeh et al. teach wherein a plurality of the paths are Manhattan paths, wherein at least one of the routes traverses some of the Manhattan paths (see fig 13, 14, 16 col.2; col. 10 and background and summary).
- 7. As to claim 31-33 Sarrafzadeh et al. wherein a plurality of edges exist between the sub-regions defined by the set of partitioning lines, wherein a plurality of the edges between the sub-regions are diagonal edges, wherein at least one of the routes intersects at least one of the diagonal edges (see fig 13, 14, 16 col.2; col. 10 and background and summary).
- 8. As to claim 34-36 Sarrafzadeh et al. further comprising: a) for each particular set of potential sub-regions from a group of potential-sub-region sets, identifying a set of routes that traverse the particular set of potential sub-regions, wherein some of the routes have diagonal edges (figs 5-9 col. 1 lines 15-23, and fig 15 col. 10 lines 5-10);

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Scepanovic did not teach storing the identified routes.

Raspanovic did teach storing the identified routes (col. 17, table 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the identified routes because store the identified routes could be utilized in the future for design if needed, which would improve design time.

9. As to claim 37 and 42 Sarrafzadeh et al. teach for a router that uses a set of partitioning lines to partition an integrated circuit ("IC") layout region into a plurality of sub-regions, wherein a plurality of routing paths exist between the sub-regions, a method of pre-computing routes for connecting said sub-regions, the method comprising: for each particular combination of two or more sub-regions, identifying at least one route for connecting the particular combination of said sub-regions (figs 5-9 col. 1 lines 15-23 and abstract); identifying the routing paths used by each identified route, wherein some of the identified routing paths are diagonal (figs 5-9 col. 1 lines 15-23, and fig 15 col. 10 lines 5-10);

Scepanovic did not teach storing the identified routing paths for each identified routes in a storage structure.

Raspanovic did teach storing the identified routing paths for each identified routes in a storage structure (col. 17, table 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to storing the identified routing paths for each identified routes in a storage structure because storing the identified routing paths for each identified routes in a storage structure could be utilized in the future for design if needed, which would improve design time.

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- 10. As to claim 38, 41 and 43 Sarrafzadeh et al. teach wherein some of the routing paths are horizontal (fig 5-9).
- 11. As to claim 39 and 44 Sarrafzadeh et al. teach wherein some of the routing paths are Manhattan (see fig 13, 14, 16 col.2; col. 10 and background and summary).
- 12. As to claim 40 and 45 Sarrafzadeh et al. teach wherein the Manhattan routing paths are defined with respect to a first grid, and wherein the diagonal routing paths are defined with respect to a second grid (see fig 13, 14, 16 col.2; col. 10 and background and summary).
- 13. As to claim 46 and 47 Sarrafzadeh et al. teach a method of pre-computing routes for nets in a region of an integrated circuit ("IC") layout, the method comprising: a) defining a set of partitioning lines for partitioning the region into a plurality of sub-regions during a routing operation, wherein a plurality of +45 diagonal paths and a plurality of Manhattan paths exist between the sub-regions (figs 5-9 col. 1 lines 15-23 and fig 13, 14, 16 col.2; col. 10 and background and summary); b) for a set of potential sub-regions, identifying a set of routes that traverse the potential set of sub-regions, wherein at least one of the routes utilizes at least one diagonal path and one Manhattan path (figs 5-9 col. 1 lines 15-23, and fig 15 col. 10 lines 5-10 and fig 13, 14, 16 col.2; col. 10 and background and summary);

Scepanovic did not teach storing the identified routes.

Raspanovic did teach storing the identified routes (col. 17, table 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the identified routes because store the identified routes could be utilized in the future for design if needed, which would improve design time.

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Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh C. Tat whose telephone number is (703) 305-4855. The examiner can normally be reached on 7:30 - 4:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Binh Tat Art Unit 2825 May 15, 2004

> VUTHE SIEK PRIMARY EXAMINER